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EXAMINER

DAFTUAR, SAKET K

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/826,205	Applicant(s) YANG ET AL.	
	Examiner SAKET K. DAFTUAR	Art Unit 2151	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 February 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Response to Amendment

1. This office action is responsive to the amendment filed on February 4th, 2008.

Claims 1-15 are presented for the further examination.

Response to Arguments

2. Applicant's arguments filed on February 4th, 2008 have been fully considered but they are not persuasive. As per arguments filed, applicant argues in substance that:

a. Srivastava does not anticipate session label as described in current application.

In response to applicant argument a), Srivastava discloses that each packet has a label such as MPLS label which also includes a label for each protocol session such as TCP/IP and UDP session and briefly discloses that each session has a SYN and ACK packets that carries a label assignment reply (see column 21, line 14 - column 22, line 65). In addition Srivastava also discloses "Labeling mechanisms offer other ways of distributing data in a network more efficiently. In a normally routed data network, frames of data pass from a source to a destination in a hop-by-hop basis. In this context, a "hop" represents a specific network data processing device, such as a router. Transit routers evaluate each frame and perform a route table lookup to determine the next hop toward the destination. Typically, *the Layer 3 header of a frame is evaluated in this step*. "Layer 3" refers to one of the logical communication layers defined in the Open Systems Interconnect (OSI) reference model. This evaluation process

tends to reduce throughput in a network because of the intensive processing steps that are needed to process each frame. Although some routers implement hardware and software switching techniques to accelerate the evaluation process by creating high-speed cache entries, these methods rely upon the Layer 3 routing protocol to determine the path to the destination.” Therefore, applicant arguments presented with respect to session labels and data header are not persuasive as Srivastava clearly anticipated all of them and therefore, the rejection is maintained.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1-7 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 1 now recites “plurality of busses coupled in front of the plurality of servers ...” No where in disclosure mentioned that “a bus” or “plurality of busses coupled in front of the plurality of servers”. Therefore, the claims failed to comply with written description requirement.

Claim Rejections - 35 USC § 101

5. Claims 1-7 are rejected under 35 U.S.C. 101 in previous office has been withdrawn due to claim amendments.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1-15 are rejected under 35 U.S.C. 102(e) as being anticipated by
Srivastava U.S. Patent Number 6,856,991 B1 (hereinafter Srivastava).

As per claim 1, Srivastava discloses a plurality of busses coupled in front of a plurality of servers, the plurality of servers coupled to a plurality of clients through the Internet [see column 9, lines 1-45; column 28, lines 5-48]; a processor coupled to [see column 28, lines 5-48] a packet analyzing unit, the packet analyzing unit operates to determine whether a session label has been attached to a received packet, analyzing header information of the received packet to learn session information [evaluating each frame] for a received packet without a session label, and attaching a session label to a header of the received [edge label switch router creates a label and applies it to packets] packet without a

session label (see column 3, line 20 – column 4, line 9); a load balancing processing unit that operates to assigning a server [selected server] to a session of the received packet without the session label attached in view of load balancing (see column 6, lines 5-31); a session label switching unit that operates hardware-switching [hop-by-hop routing between nodes] the received packet with the session label attached [MPLS labels to all nodes] using only the session label information without performing a packet analysis process or server assignment process [evaluating each frame, column 3, line 20- column 4, line 9] (see column 6, lines 5-43); a session managing unit [edge label switch router] for managing and maintaining relevant information and states of sessions requested by the clients; and a session label managing unit for assigning the session label, and withdrawing and managing session label not in use (column 3, line 20- column 4, line 9, each edge label switch router maintains a label forwarding information base as), wherein the load balancing apparatus uses Multi-Protocol Label Switching (MPLS) session labels and analyzes requests from the clients and distributes the requests among the servers [see column 9, lines 1-45; column 28, lines 5-48].

As per claim 2, Srivastava discloses a session label inspecting unit for inspecting whether the session label has been attached to the received packet, transmitting the received packet to the session label switching unit to switch the received packet if the session label has been attached to the received packet, and transmitting the received packet to a packet contents analyzing unit if the

session label is not attached to the received packet (see column 6, lines 7-43, column 16, lines 20-42; Figures 3A –3F); the packet contents analyzing unit for learning the session information by analyzing the header information of the received packet ranging from third to seventh layers [Layer 3 in OSI, column 3, line 20 – column 4, line 9] of the received packet, inspecting whether a session of the received packet is a new session, transmitting the received packet of the new session to the load balancing processing unit to assign the server to the new session if the session is new, and transmitting the packet of an existing session to a predetermined server [selected server based on hop-by-hop mapping] if the session is not new [create new Label at last nodes for each packet and transmitting the labels to the all node in the existing session, see column 6, lines 7-43]; and a session label attaching unit for attaching the assigned session label to the header of the received packet [distributing MPLS labels to all nodes in mapped network], (see column 6, lines 7-43; column 25, line 45 – column 26, line 59).

As per claim 3, Srivastava discloses the session label is an MPLS-based session label [MPLS label, see column 6, lines 7-43].

As per claim 4, Srivastava discloses a load balancing algorithm unit for determining a load balancing server using a specific algorithm in view of information including a round robin method, a minimally connected server, weights and response time from the server (column 12, lines 46-53 with column 2, lines 36-41); a server configuration/state managing unit for managing

configurations and states of the servers by performing real time server state monitoring or configuration management (column 4, lines 43-43); and a service acceptance control unit for refusing a service request of the new session if the existing session is serviced (see column 4, lines 58- 67).

As per claim 5, Srivastava discloses the session label switching [labeling mechanism, column 3, lines 20 – 37] unit performs label switching with reference to a value of the session label attached to the header of the received packet, and a label switching table [route table] including information of line cards and ports through which the received packet is input/output (column 6, lines 7-43, column 25, line 45 – column 26, line 59).

As per claim 6, Srivastava discloses the session managing unit recognizes start, determination and interruption of the session, and adds, deletes and changes relevant information in the session table (column 25, line 45 – column 26, line 59).

As per claim 7, Srivastava discloses the server load balancing apparatus according to claim 1, wherein the assignment of the session label is performed in such a way that a Client-To-Server (C2S) session label is assigned an odd number and a Server-To-Client (S2C) session label is assigned an even number obtained by adding 1 to the value of the C2S session label (column 6, lines 7-43; column 21, lines 47-59).

As per claim 8, Srivastava discloses analyzing a header of a received packet and assigning a C2S session label when the client requests service from

the server through the server load balancing apparatus and determining if a session has began (see column 3, line 20 – column 4, line 9; see column 6, lines 7-43 with Figures 1A-1B and column 16, lines 20-42); assigning a specific server for servicing the session in view of load balancing, attaching the assigned C2S session label to the received packet, and transmitting the received packet with the C2S session label attached to the server (see column 3, line 20 – column 4, line 9; see column 6, lines 7-43 with Figures 1A-1B and 4; column 16, lines 20-42); automatically assigning an S2C session label, that is, an opposite direction session label, with reference to a value of a session label of the received packet (see column 3, line 20 – column 4, line 9; see column 6, lines 7-43; column 16, lines 20-42); processing the service request from the client, attaching the assigned S2C session label to the packet according to a result of the processing, and transmitting the received packet with the S2C session label to the server load balancing apparatus (see column 3, line 20 – column 4, line 9; see column 6, lines 7-43; column 16, lines 20-42); label switching the received packet to the client using the value of the session label (see column 3, line 20 – column 4, line 9; see column 6, lines 7-43 with Figures 1A-1B and 4; column 16, lines 20-42); automatically assigning the C2S session label, that is, an opposite direction session label to the received packet, with reference to the value of the session label of the received packet (see column 3, line 20 – column 4, line 9; see column 6, lines 7-43 with Figures 1A-1B and 4; column 16, lines 20-42); attaching the packet with the assigned C2S session label attached and transmitting the

packet with the assigned C2S session label to the server load balancing apparatus when the client transmits the packet to a destination server (see column 3, line 20 – column 4, line 9; see column 6, lines 7-43 with Figures 1A-1B and 4; column 16, lines 20-42); and label switching the packet with C2S session label attached to the destination server (see column 3, line 20 – column 4, line 9; see column 6, lines 7-43 with Figures 1A-1B and 4; column 16, lines 20-42); wherein the server load balancing apparatus determines the server for connection using information of the session label with respect to the packet with the session label attached (see column 3, line 20 – column 4, line 9; see column 6, lines 7-43 with Figures 1A-1B and 4; column 16, lines 20-42).

As per claim 9, Srivastava discloses wherein it is inspected whether the MPLS session label has been attached to the packet input into the server load balancing apparatus, and the packet with the MPLS session label attached is fast-switched using only information of the session label (see column 3, line 20 – column 4, line 9; see column 6, lines 7-43; column 12, lines 41-43).

As per claim 10, Srivastava discloses wherein it is inspected whether the MPLS session label has been attached to the packet input into the server load balancing apparatus, and only the header of the packet header without the session label attached is selectively analyzed (see column 3, line 20 – column 4, line 9; see column 6, lines 7-43).

As per claim 11, Srivastava discloses the step of assigning the specific server comprises determining whether to accept or refuse the session of only the

packet without the session label attached (see column 3, line 20 – column 4, line 9; see column 6, lines 7-43).

As per claim 12, Srivastava discloses the server load balancing apparatus omits a function of performing mapping between a virtual IP address and an IP addresses of the server in such a way that the server attaches the virtual IP address to the header of the packet with the session label attached (see column 1, lines 37-58; column 2, lines 25-35).

As per claim 13, Srivastava discloses the C2S session label is assigned an odd number, and the S2C session label is automatically assigned a value obtained by adding 1 to the value of the C2S session label (see column 3, line 20 – column 4, line 9; see column 6, lines 7-43; column 21, lines 47-59).

As per claim 14, Srivastava discloses the assignment of the bi-directional session labels (S2S and S2C) is performed by automatically recognizing the value of the opposite directional label without using an additional protocol for assigning a session label to a packet in such a way the server and the client add 1 to and subtract 1 from the value of the session label that is attached to the packet received from an opposite party, respectively (see column 3, line 20 – column 4, line 9; see column 6, lines 7-43; column 21, lines 47-59).

As per claim 15, Srivastava discloses the session label is attached to the header of the received packet according to a MPLS header configuration (see column 3, line 20 – column 4, line 9; see column 6, lines 7-43).

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. MPLS Fast Reroute Without Full Mesh Traffic Engineering by Vasseur et al. U.S. Patent Number 7,230,913 B1.

b. Dynamically Adjusting MultiProtocol Label Switching (MPLS) Traffic Engineering Tunnel Bandwidth by Goguen et al. U.S. Patent Number 6,665,273 B1.

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Contact Information

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Saket K. Daftuar whose telephone number is 571-272-8363. The examiner can normally be reached on 8:30am-5:00pm M-W.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Follansbee can be reached on 571-272-3964. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/S. K. D./
Examiner, Art Unit 2151

/John Follansbee/

Supervisory Patent Examiner, Art Unit 2151

